US POSTAL SERVICE CASE STUDY

INTERNET COMMUNICATING THERMOSTATS

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**United States Postal Service**

Internet Communicating Thermostats

Overview

- **Thermostat that can send *and* receive settings / status over the Internet**
  - Wired & installed like conventional thermostats
  - Operates with or without communication
  - Remote access to thermostats via Internet connections, open system protocols
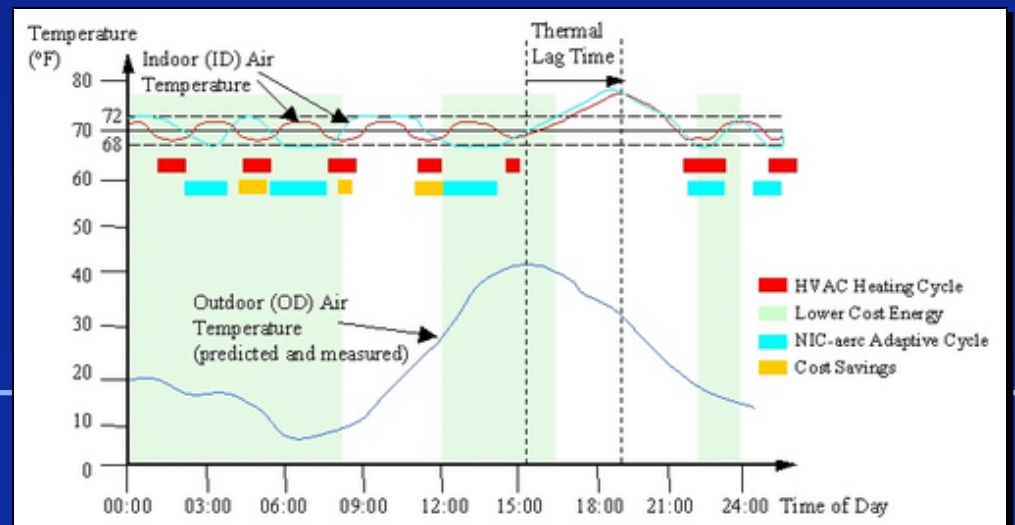 - Easy access for local user override

Thermostat setpoint affects energy savings
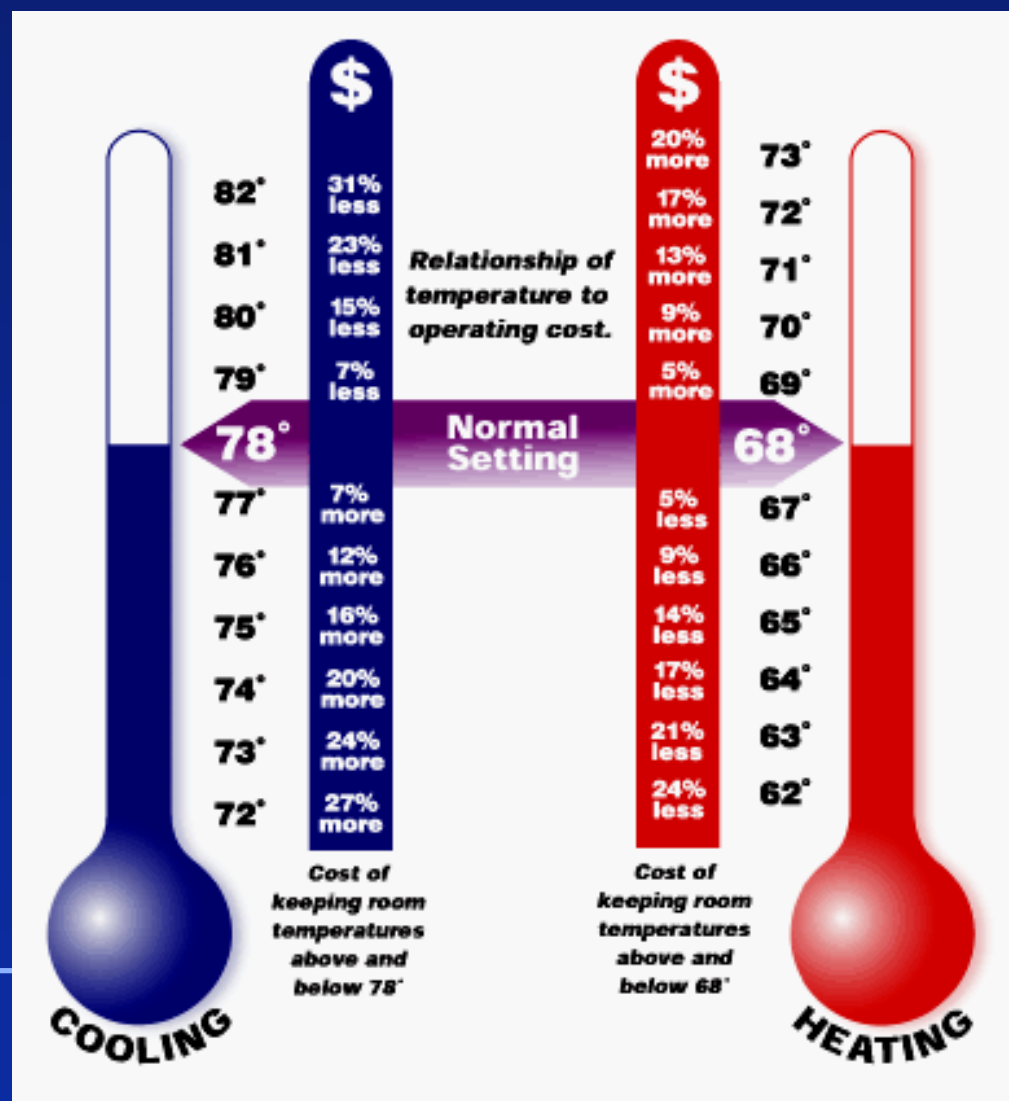
Information that can be collected remotely

❑ **Operating time of each unit**

❑ **Out of comfort-range alert and time**

❑ **Daily, weekly, monthly run hours**

  ▪ **During occupied and unoccupied hours**
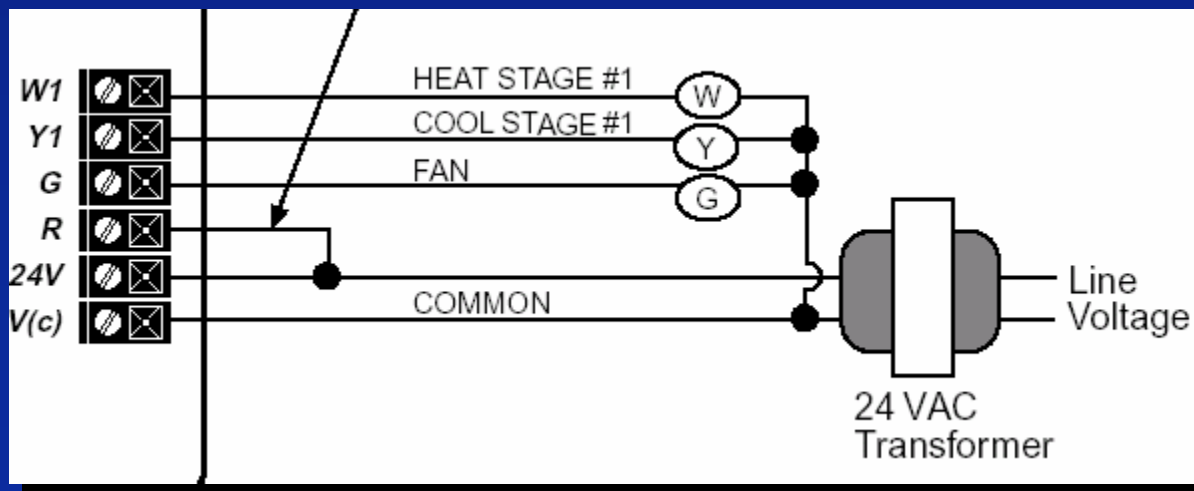
❑ **Local over-ride times & temperatures**

Internet Communicating Thermostat

Installs and works like a conventional thermostat

- ☐ *no "learning curve"*
- ☐ *intuitive without training*

Internet Communicating Thermostats

Internet Connections

- ❑ *Controller communicates using CAT-3 or CAT-5 via standard interface*
- ❑ *Distribution panels connected to computer interface*
- ❑ *Each distribution panel connects up to 8 thermostats*
- ❑ *Each controller unit connects up to 4 panels (32 stats)*
- ❑ *Could also control lighting relays and other equipment on same schedule*
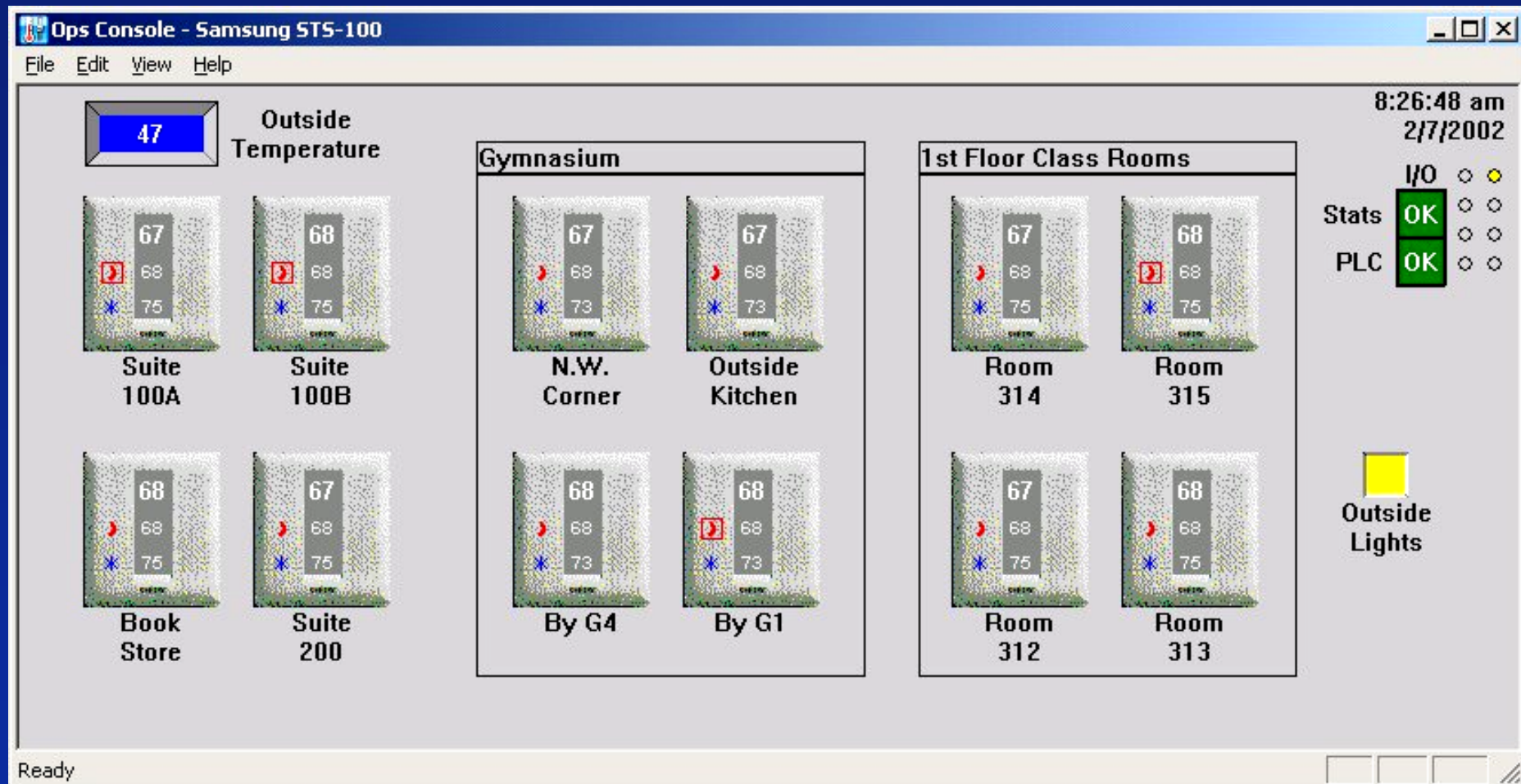
Internet Communication Connections
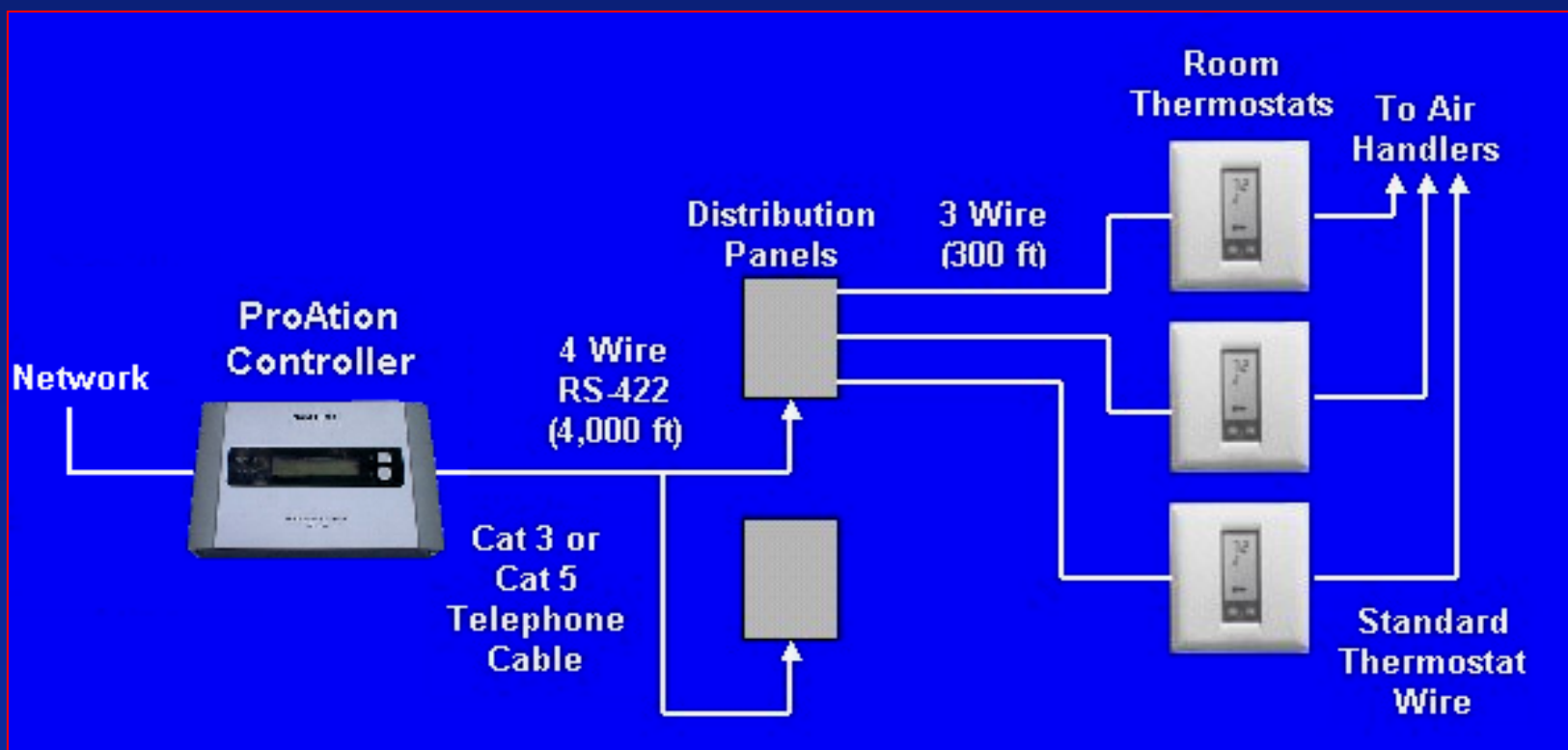
Adjustments that can be made remotely

❑ *Temperature set points*

❑ *Schedule times, days, holiday/weekend*

❑ *Local set point adjustment limits*

❑ *Heating, Cooling, or Auto*

❑ *Fan cycle or continuous*

Example Screen Display

Example Input Form

Example Air-Conditioner Run Hours

Book Store Details - 04/18/00
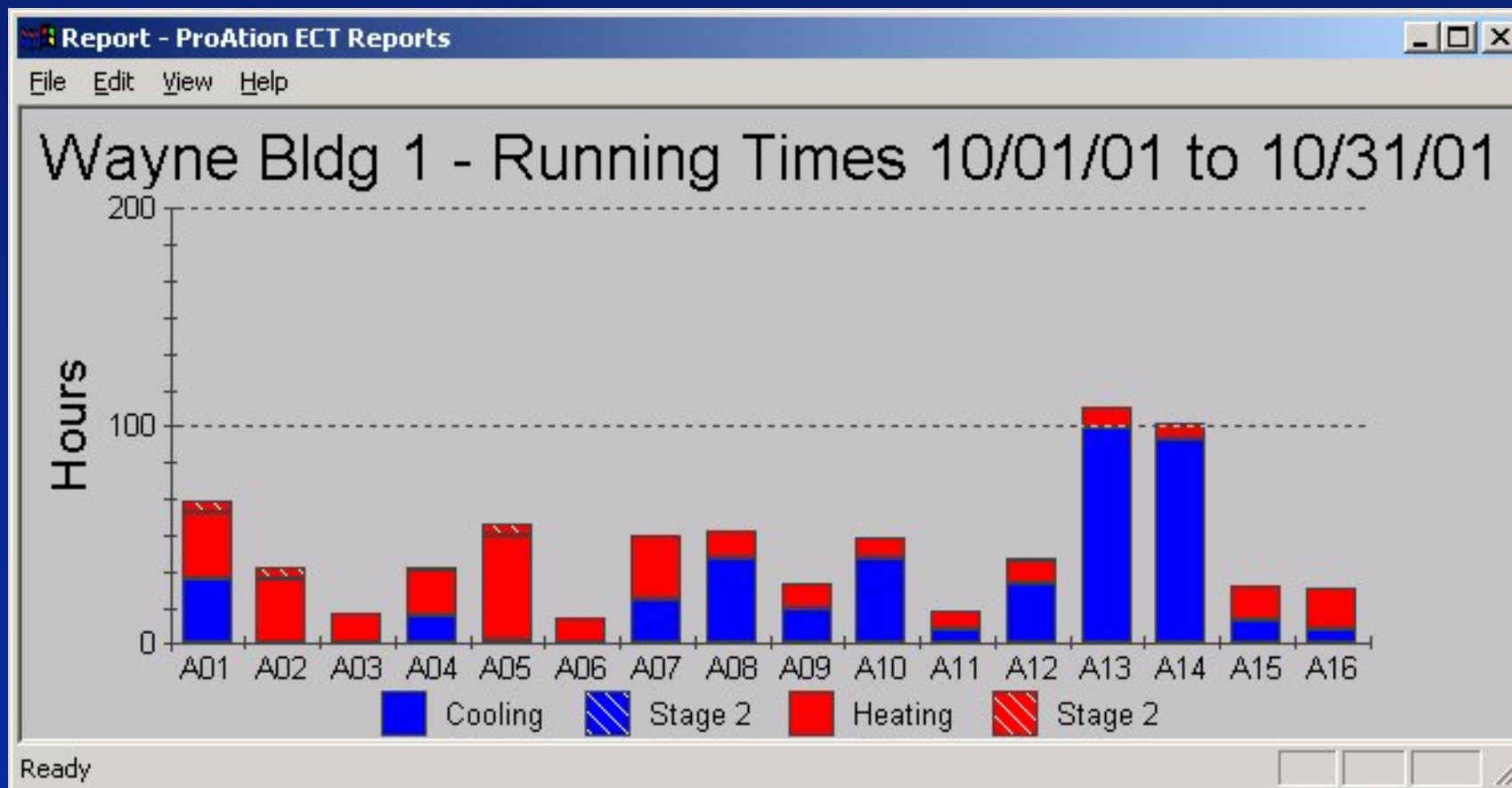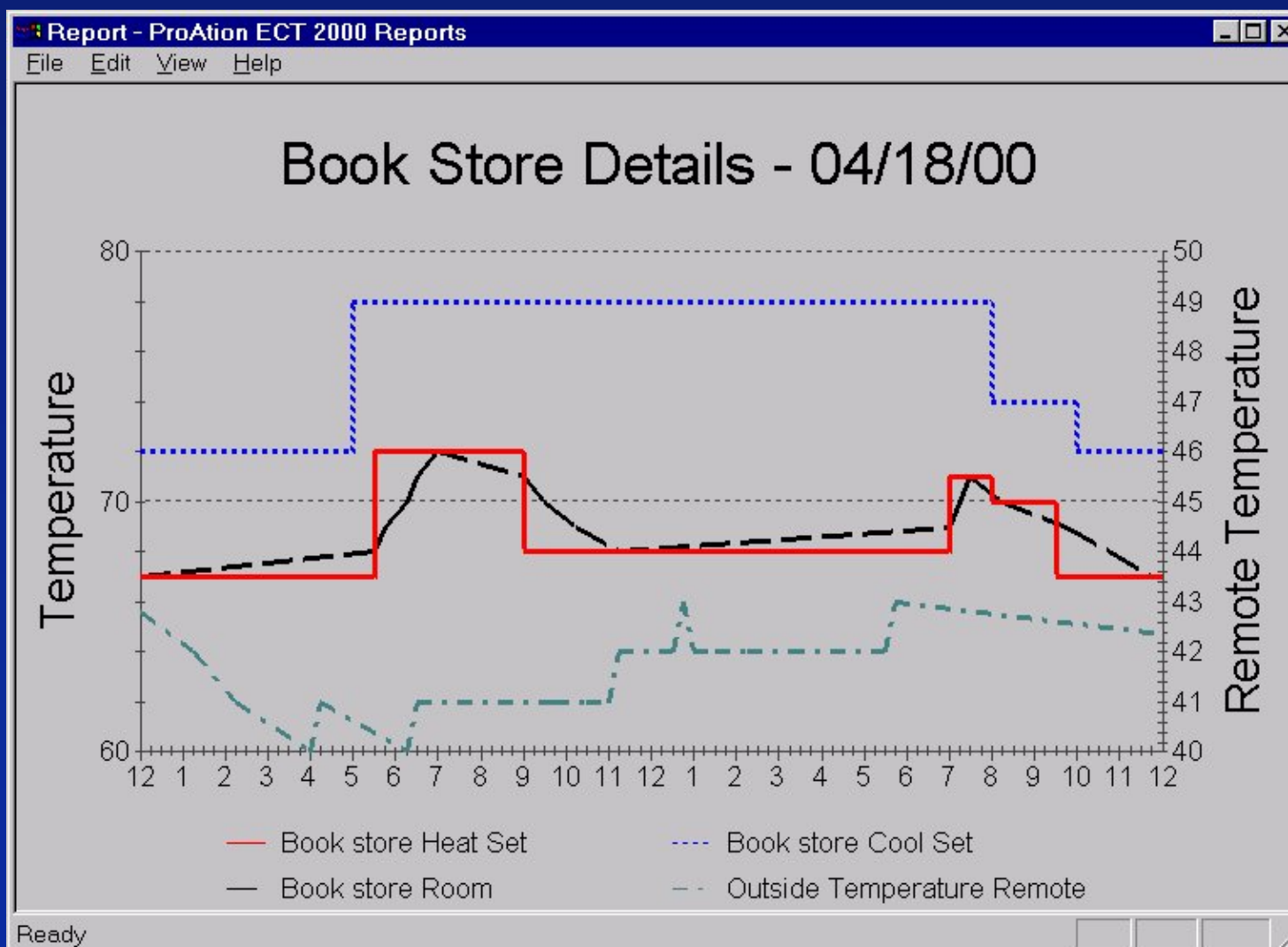
Internet Communicating Thermostats

Case Study

Five facilities

- **Installed cost per facility average $2000**
- **Estimated savings: $5,800 ~ $8,400 per year**
- **Payback period: 1.5 to 2 years**
- **Installed by in-house technicians**
- **System is fairly simple and user friendly**

Case Study

Internet Communicating Thermostats

Evaluations-Pros/Cons

- ❏ **Power outages knocking out system & clock settings**

- ❏ **Several far away sites can be controlled very easily from one location**

- ❏ **Less costly to install than a full DDC* system**

- ❏ **Only 2 out 5 sites actually saved energy**
   - ✓ **US Postal service unique**

* DDC – Direct Digital Control

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Thank You!